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(FILE 'HOME' ENTERED AT 15:08:49 ON 22 FEB 2004)

FILE 'STNGUIDE' ENTERED AT 15:09:07 ON 22 FEB 2004

FILE 'HOME' ENTERED AT 15:09:14 ON 22 FEB 2004

FILE 'CAPLUS' ENTERED AT 15:09:27 ON 22 FEB 2004

L1	5926	S LITHIUM (3A) MANGANESE (3A) OXIDE
L2	1012	S LITHIUM (3A) MANGANESE (3A) DIOXIDE
L3	6616	S L1 OR L2
L4	81	S L3 AND BET
L5	326	S L3 AND (SURFACE (2A) AREA)
L6	349	S L4 OR L5
L7	82	S L6 AND SIZE#
L8	10	S L7 AND (PORE# OR INTRAPORE#)

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YOU HAVE REQUESTED DATA FROM 10 ANSWERS - CONTINUE? Y/(N):y

L8 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:768441 CAPLUS
DOCUMENT NUMBER: 139:283338
TITLE: Spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability, manufacture thereof using lipophilic agent , electrophotographic developer carrier
INVENTOR(S): Hakata, Toshiyuki; Kawasaki, Hiroshi
PATENT ASSIGNEE(S): Toda Kogyo Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003280281	A2	20031002	JP 2002-87744	20020327

PRIORITY APPLN. INFO.: JP 2002-87744 20020327

AB The spherical ferrite particle is represented by (MO)100-x(Fe2O3)x (M = ≥1 metal selected from Li, Mg, Ni, Cu, Zn, Mn, Ca, and Fe; X = 45-95 mol%), and is characterized by the average grain diameter 1-45 µm, the **BET** sp. **surface area** ≤0.2 m2/g, and the **pore** volume ≤0.05 mL/g on the basis of the Mg injection method. The process comprises the steps of (1) forming a composite grain from a ferrite raw material grain and a phenolic resin, (2) heating at 400-700° to remove the phenolic resin, and (3) heating at

800-1,400°. The ferrite raw material may be selected from Li_2O, Li_2CO_3, MgO, NiO, CuO, ZnO, MnO, Mn_3O_4, CaO, and Fe_2O_3. The ferrite raw material may be processed by a lipophilic agent such as a silane coupling agent and a titanate coupling agent in advance.

IT **Surface area**
(**BET**; spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT Heat treatment
Sintering
(manufacture of spherical ferrite particle for electrophotog. developer carrier)

IT Electrophotographic carriers
Grain **size**
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT Phenolic resins, processes
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); REM (Removal or disposal); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT Phenolic resins, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT **Pore size**
(volume; spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT 1305-78-8, Calcium oxide (CaO), processes 1309-37-1, Iron oxide (Fe_2O_3), processes 1309-48-4, Magnesia, processes 1313-99-1, Nickel oxide (NiO), processes 1314-13-2, Zinc oxide, processes 1317-35-7, Manganese oxide (Mn_3O_4) 1317-38-0, Copper oxide (CuO), processes 1344-43-0, Manganese oxide (MnO), processes
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process)
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT 9003-35-4, Formalin-phenol copolymer
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); REM (Removal or disposal); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT 12645-49-7, Iron manganese zinc oxide 53027-29-5, Iron **lithium manganese oxide** 54427-17-7, Copper Iron zinc oxide 67663-41-6, Copper iron magnesium zinc oxide 67663-42-7, Copper iron nickel zinc oxide 107566-48-3, Copper iron magnesium manganese zinc oxide 319925-58-1, Calcium iron magnesium oxide
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

IT 2530-83-8, KBM-403
RL: TEM (Technical or engineered material use); USES (Uses)
(spherical ferrite particle having specific grain **size** distribution, **BET surface area** and porosity for charge stability of electrophotog. developer carrier)

L8 ANSWER 2 OF 10 CAPLUS

ACCESSION NUMBER: 2000:877107 CAPLUS
DOCUMENT NUMBER: 134:31221
TITLE: Electrodes for secondary nonaqueous batteries and their manufacture
INVENTOR(S): Nakano, Makoto
PATENT ASSIGNEE(S): Japan Energy Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000348710	A2	20001215	JP 1999-159212	19990607

PRIORITY APPLN. INFO.: JP 1999-159212 19990607

AB The electrodes, containing active mass and a thermoplastic binder and having 0.01-10 μm- **size pores** in which electrolyte solns. invade, have average **pore size** (dav) 0.1-1 μm, where dav = 4V/A (V is a **pore** volume measured by Hg pressure method; A is a **pore surface area** measured by Hg pressure method). The electrodes are manufactured by extrusion molding of a mixture containing active mass, a binder, and a plasticizer under shear rate ≥103 s-1 and shear viscosity ≤101 MPa and then substituting the plasticizer with an electrolyte solution The electrodes, having high film thickness and capacity, are obtained without uses of organic solvents.

IT Battery anodes
Battery cathodes
Battery electrodes
Extrusion, nonbiological
Plasticizers

Pore size
(electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(mesophase pitch-based, anodes; electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(anode; electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

IT 9011-17-0, Kynar 2801
RL: DEV (Device component use); USES (Uses)
(binder; electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

IT 12057-17-9, **Lithium manganese oxide** (LiMn2O4)
RL: DEV (Device component use); USES (Uses)
(cathode; electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electrolyte solution; electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

IT 84-74-2, Dibutyl phthalate
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(plasticizer; electrodes having controlled **pore size** manufactured by substitution of plasticizer with electrolyte solution for nonaq. batteries)

L8 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:672494 CAPLUS
DOCUMENT NUMBER: 131:288848
TITLE: Polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries
INVENTOR(S): Hilaire, Michel; Moneuse, Carole
PATENT ASSIGNEE(S): Alcatel, Fr.
SOURCE: Eur. Pat. Appl., 5 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 951088	A2	19991020	EP 1999-400850	19990408
EP 951088	A3	19991103		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
FR 2777699	A1	19991022	FR 1998-4744	19980416
JP 11329502	A2	19991130	JP 1999-107730	19990415
US 6290878	B1	20010918	US 1999-292304	19990415

PRIORITY APPLN. INFO.: FR 1998-4744 A 19980416

AB The solid polymer electrolyte for Li secondary batteries comprises a gel containing polyacrylonitrile, Li salts (e.g., LiPF6) in organic solvents (e.g., ethylene carbonate, propylene carbonate), and 1-10 weight% reinforcing additives, especially polyamide particles (**size** 0.7 ± 0.2 μm or 5-60 ± 1.5 μm, **pore** volume 0.2-0.6 cm3/g, sp. weight 1-1.2 g/cm3, sp. **surface area** 1-30 m2/g).

IT Polyamides, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Orgasol, electrolyte additives; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT Polymer electrolytes
(gel electrolytes; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT Secondary batteries
(lithium; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT Battery electrolytes
(polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT 7439-93-2, Lithium, uses 39448-96-9, Graphite, compound with lithium
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(anodes; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT 12057-17-9, **Lithium manganese oxide**
(LiMn2O4)
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(cathodes; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT 21324-40-3, Lithium hexafluorophosphate 25014-41-9, Polyacrylonitrile
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrolytes; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT 9003-07-0, Polypropylene
RL: DEV (Device component use); TEM (Technical or engineered material

use); USES (Uses)
(separators; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(solvents; polyacrylonitrile-based solid polymer electrolyte for lithium secondary batteries)

L8 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:465141 CAPLUS
DOCUMENT NUMBER: 131:274098
TITLE: Nonaqueous UFC suspensions, used as conductive additive in cathodes for lithium batteries
AUTHOR(S): Momchilov, A.; Trifonova, A.; Banov, B.; Pourecheva, B.; Kozawa, A.
CORPORATE SOURCE: Central Laboratory of Electrochemical Power Sources, Bulgarian Academy of Sciences, Sofia, Bulg.
SOURCE: Journal of Power Sources (1999), 81-82, 566-570
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Three nonaq. ultrafine carbon suspensions (UFC) were explored as conductive additives in $LiMn_2O_4$ cathodes for Li cell. The sp. surface areas, **pore** volume distributions of the pure materials and of the cathode mixts. were measured. The results were compared with these obtained using TAB2 (Teflonized acetylene black) alone. A considerable decreasing of the specific resistivity and **pore** volume increasing of the UFC pellets after sintering was established. The electrochem. cycling test showed 5 to 10% higher discharge capacity of the cathodes containing 20% UFC+TAB2 at a ratio from 1:3 to 1:1, than that of the cathodes with only 20% TAB2. It is proposed the better results are due to the two phys. chemical properties: **pore** volume and specific resistivity.

IT Secondary batteries
(lithium; nonaq. ultrafine carbon suspensions, used as conductive additive in cathodes for lithium batteries)

IT Battery cathodes
Pore size distribution
Surface area
Suspensions
(nonaq. ultrafine carbon suspensions, used as conductive additive in cathodes for lithium batteries)

IT Carbon black, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(nonaq. ultrafine carbon suspensions, used as conductive additive in cathodes for lithium batteries)

IT 12057-17-9, **Lithium manganese oxide** $LiMn_2O_4$
RL: DEV (Device component use); USES (Uses)

(nonaq. ultrafine carbon suspensions, used as conductive additive in cathodes for lithium batteries)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(nonaq. ultrafine carbon suspensions, used as conductive additive in cathodes for lithium batteries)

IT 872-50-4, n-Methylpyrrolidone, uses 9003-39-8, Polyvinyl pyrrolidone
RL: TEM (Technical or engineered material use); USES (Uses)
(nonaq. ultrafine carbon suspensions, used as conductive additive in cathodes for lithium batteries)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 1999:322620 CAPLUS
DOCUMENT NUMBER: 131:7568
TITLE: Active materials for nonaqueous secondary batteries, cathode plates, and nonaqueous secondary batteries
INVENTOR(S): Kono, Tomoko; Watanabe, Shoichiro; Fujiwara, Takafumi; Kobayashi, Shigeo
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11135119	A2	19990521	JP 1997-293883	19971027
CN 1207208	A	19990203	CN 1997-191595	19971105

PRIORITY APPLN. INFO.: JP 1997-293883 19971027

AB The active materials have composition formula LixNiyM1-yO2 (1.10 ≥ x ≥ 0.98; M = Co, Mn, Cr, Fe, Mg, and/or Al; 0.95 ≥ y ≥ 0.7), are spherical or spheroidal agglomerates of primary particles having ≤2 μm, and satisfy the following conditions: (1) volume of **pores** having diameter ≤30 Å is ≤10% of the total **pore** volume, (2) volume of **pores** having diameter ≤30 Å is ≤0.002 cm3/g, (3) **BET surface area** defined by N adsorption is 0.15-0.3 m2/g, (4) average particle **size** 10-16 μm, (5) tap d. 2.0-3.0 g/cm3, and (6) volume of the **pores** 0.0015-0.06cm3/g. The active materials may be prepared by mixing Li salt and NiyM1-y(OH)2, firing at 700-900°, crushing, and meshing. Cathodes plates comprising the above active materials, C conductors, binders and supporting plates are also claimed. Nonaq. batteries comprising the cathode plates, Li-intercalating anodes, org electrolytes, separators, cases, and sealing plates equipped with safe valves are also claimed. The batteries are storage stable.

IT Battery cathodes
(lithium nickel mixed oxide cathode active materials for nonaq. secondary batteries)

IT Secondary batteries
(lithium; lithium nickel mixed oxide cathode active materials for nonaq. secondary batteries)

IT 1310-65-2, Lithium hydroxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(cathode active material from; lithium nickel mixed oxide cathode active materials for nonaq. secondary batteries)

IT 147098-69-9P, Cobalt nickel hydroxide [Co0.1Ni0.9(OH)2] 147098-70-2P, Cobalt nickel hydroxide [Co0.2Ni0.8(OH)2] 147098-71-3P, Cobalt nickel hydroxide [Co0.3Ni0.7(OH)2] 193680-35-2P, Cobalt nickel hydroxide [Co0.15Ni0.85(OH)2] 196006-78-7P, Manganese nickel hydroxide [Mn0.15Ni0.85(OH)2] 196006-79-8P, Chromium nickel hydroxide [Cr0.15Ni0.85(OH)2] 196006-80-1P, Iron nickel hydroxide [Fe0.15Ni0.85(OH)2] 196006-81-2P, Magnesium nickel hydroxide [Mg0.15Ni0.85(OH)2] 196006-82-3P, Aluminum nickel hydroxide [Al0.15Ni0.85(OH)2] 196006-84-5P, Cobalt nickel hydroxide [Co0.05Ni0.95(OH)2]
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)
(cathode active material from; lithium nickel mixed oxide cathode active materials for nonaq. secondary batteries)

IT 143623-51-2P, Cobalt lithium nickel oxide (Co0.15LiNi0.85O2) 225661-99-4P, Cobalt lithium nickel oxide (Co0.05Li0.98-1.1Ni0.95O2) 225662-00-0P, Cobalt lithium nickel oxide (Co0.1Li0.98-1.1Ni0.9O2) 225662-01-1P, Cobalt lithium nickel oxide (Co0.2Li0.98-1.1Ni0.8O2) 225662-02-2P, Cobalt lithium nickel oxide (Co0.3Li0.98-1.1Ni0.7O2) 225662-03-3P, Cobalt lithium magnesium nickel oxide (Co0.15Li0.98-1.1Mg0.05Ni0.8O2) 225662-04-4P, **Lithium manganese** nickel **oxide** (Li0.98-1.1Mn0.05Ni0.85O2) 225662-05-5P, Chromium lithium nickel oxide (Cr0.05Li0.98-1.1Ni0.85O2) 225662-06-6P, Iron lithium nickel oxide (Fe0.05Li0.98-1.1Ni0.85O2) 225662-07-7P, Lithium magnesium nickel oxide (Li0.98-1.1Mg0.05Ni0.85O2) 225662-08-8P, Aluminum lithium nickel oxide (Al0.05Li0.98-1.1Ni0.85O2)
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(lithium nickel mixed oxide cathode active materials for nonaq. secondary batteries)

IT 196006-83-4P, Cobalt magnesium nickel hydroxide [Co0.15Mg0.05Ni0.8(OH)2]
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)
(lithium nickel mixed oxide cathode active materials for nonaq. secondary batteries)

L8 ANSWER 6 OF 10 CAPLUS
ACCESSION NUMBER: 1994:688448 CAPLUS
DOCUMENT NUMBER: 121:288448
TITLE: Impedance measurements on some doped MnO2 electrodes

in H2SO4 electrolyte

AUTHOR(S): Desai, B. D.; Lobo, F. S.; Dalal, V. N. Kamat
CORPORATE SOURCE: Dep. Chem., Goa Univ., Goa, 403203, India

SOURCE: Journal of Applied Electrochemistry (1994), 24(9), 917-22
CODEN: JAELBJ; ISSN: 0021-891X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A.c. impedance behavior of β-MnO2 and doped β-MnO2 electrodes in H2SO4 medium was assessed with a view to explaining the mechanism of the discharge behavior of MnO2 electrodes in 4M H2SO4 electrolyte. The electrodes used in this work appear to be intermediate cases of planar and porous electrodes as the angles, θ, made by the low frequency part with the real axis are in the range (30-60°). The Nyquist plots and the Randle plots tend to reinforce the observation made by Tye that the capacity yield is essentially diffusion controlled. The depression and flattening of semicircles observed reveals a link with the heterogeneity of the planar electrode and with the porosity of the pitted electrode. The deviation from a 45° angle made by the low frequency part with the real axis may either be explained by the roughness of the electrode surface or the shallow **pores** on the surface of the electrodes; in other words due to the difference between the apparent and true surface areas. The double layer capacitance values of the electrodes seem to subsume adsorption capacitances and diffusion factors. Hence, the relative increase in magnitude. The electrodes appear to behave like planar electrodes when 10 μF is introduced into the circuit as a parallel capacitance since angles θ vary between 40-58°. The undoped β-MnO2 electrode, as well as those prepared from Li-MnO2, Ag-MnO2, and I.C.8, appear to be planar electrodes.

IT Electric double layer
(capacitance; of doped MnO2 electrodes in H2SO4 electrolyte)

IT **Surface area**
(of doped MnO2 electrodes)

IT Electric impedance
(of doped MnO2 electrodes in H2SO4 electrolyte)

IT Crystallites
(**size**; of doped MnO2 electrodes)

IT Surface structure
(roughness, of doped MnO2 electrodes)

IT 1313-13-9P, Manganese dioxide, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(elec. impedance of β-MnO and doped β-MnO2 electrodes in H2SO4 medium)

IT 7664-93-9, Sulfuric acid, uses
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(elec. impedance of β-MnO and doped β-MnO2 electrodes in solution of)

IT 113553-16-5P, Manganese oxide (MnO1.8) 114902-06-6P, Manganese oxide (MnO1.96) 119855-48-0P, Manganese oxide (MnO1.95) 137113-37-2P,

Manganese oxide (MnO1.88) 144941-59-3P, Manganese oxide (MnO1.98)
158919-60-9P, Manganese oxide (MnO1.91) 158919-61-0P, Manganese oxide
(MnO2.01) 158919-62-1P, Manganese oxide (MnO2.02)
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP
(Properties); PREP (Preparation); USES (Uses)
(preparation and elec. impedance in H2SO4 medium and **surface area** of electrodes of)

IT 119941-86-5, Manganese oxide (MnO1.92) 158919-63-2, Manganese oxide
(MnO1.94)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(preparation and elec. impedance in H2SO4 medium and **surface area** of electrodes of)

IT 7439-93-2, Lithium, uses 7439-98-7, Molybdenum, uses 7440-22-4,
Silver, uses 7440-33-7, Tungsten, uses 7440-62-2, Vanadium, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(preparation and elec. impedance in H2SO4 medium and **surface area** of manganese dioxide electrode doped with)

L8 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:	1993:654084 CAPLUS
DOCUMENT NUMBER:	119:254084
TITLE:	Relation between the physical-chemical properties and **lithium** adsorbabilities of **manganese oxide** adsorbents
AUTHOR(S):	Zhang, Shaocheng; Ooi, Kenta
CORPORATE SOURCE:	Qinghai Inst. Salt Lake, Acad. Sin., Xining, 810008, Peop. Rep. China
SOURCE:	Lizi Jiaohuan Yu Xifu (1992), 8(4), 305-10 CODEN: LJYXE5; ISSN: 1001-5493
DOCUMENT TYPE:	Journal
LANGUAGE:	Chinese

AB Four kinds of Mn oxides were prepared, treated with acid, analyzed by x-ray diffraction and TG-DTA, and determined for **surface area**, **pore size**, and Li adsorbabilities. The spinel structure of LiMn2O4 affects greatly the Li adsorbability, but the surface characteristic and TG curve have an intensive effect on the Li adsorbability. Large **surface area** and **pore** volume, small **pore size**, and high gravimetric decrement at 100-300° are favorable to the increase of the selective adsorption of Li.

IT 7439-93-2, Lithium, properties
RL: PRP (Properties)
(adsorbability of, on porous manganese oxide, phys.-chemical properties in relation to)

IT 11129-60-5, **Manganese oxide**
RL: PROC (Process)
(**lithium** adsorbability of porous, phys.-chemical properties in relation to)

L8 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:84320 CAPLUS
DOCUMENT NUMBER: 118:84320
TITLE: Phosphorus containing EMD for lithium primary cells
AUTHOR(S): Yamaguchi, M.
CORPORATE SOURCE: Battery Mater. Lab., Mitsui Min. Smelt. Co., Ltd., Hiroshima, Japan
SOURCE: Progress in Batteries & Battery Materials (1992), 11, 171-7
CODEN: PBBMEF; ISSN: 1099-4467
DOCUMENT TYPE: Journal
LANGUAGE: English

AB P-containing EMD (electrolytic MnO2) has a **surface area** of 50-100 m2/g and undergoes changes **surface area**, **pore size**, and crystal structure when heated at 380°. The P-EMD has good battery performance as a cathode active material in Li primary batteries. A test sample of the P-doped EMD was prepared in an electrolysis bath containing MnSO4, H2SO4, and H3PO4.

IT Cathodes
(battery, manganese dioxide, electrolytic, phosphorus-containing, performance of)

IT 1313-13-9, Manganese dioxide, uses
RL: USES (Uses)
(cathodes, phosphorus-containing, for lithium primary batteries)

IT 7723-14-0, Phosphorus, uses
RL: USES (Uses)
(manganese dioxide containing, electrolytic, for lithium battery cathodes)

L8 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1992:155399 CAPLUS
DOCUMENT NUMBER: 116:155399
TITLE: Research studies of the **lithium/ manganese dioxide** system
AUTHOR(S): Ilchev, N.; Banov, B.
CORPORATE SOURCE: Cent. Lab. Electrochem. Power Sour., Sofia, 1113, Bulg.
SOURCE: Progress in Batteries & Solar Cells (1991), 10, 232-41
CODEN: PBASDR; ISSN: 0198-7259
DOCUMENT TYPE: Journal
LANGUAGE: English

AB High-rate discharge performance of MnO2 cathodes in Li batteries is dependent on composition, phase structure, and pretreatments of the cathode material. During discharge in nonaq. electrolytes, the specific capacity of MnO2 decreased as the water content in the material increased. The specific capacity of materials increased as the sp. **surface area** increased, regardless of type and crystal structure (phase) of the materials. The performance of Li/MnO2 batteries under heavy discharge drain at low temperature was best for cathodes prepared with Faradiser M -chemical prepared MnO2.

IT **Pore**
(**size** of, of manganese dioxide, for cathodes of lithium

batteries)
IT Cathodes
(battery, manganese dioxide, composition and phase structure of, for lithium batteries)
IT 1313-13-9, Manganese dioxide, uses
RL: USES (Uses)
(cathodes, composition and phase structure of, lithium battery discharge performance in relation to)

L8 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:495867 CAPLUS
DOCUMENT NUMBER: 115:95867
TITLE: The **lithium-manganese dioxide** cell. IV. Relationship between physicochemical properties and electrochemical characteristics of manganese dioxide in nonaqueous electrolytes
AUTHOR(S): Ilchev, N.; Banov, B.
CORPORATE SOURCE: Cent. Lab. Electrochem. Power Sourc., Sofia, 1113, Bulg.
SOURCE: Journal of Power Sources (1991), 35(2), 175-81
CODEN: JPSODZ; ISSN: 0378-7753
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A correlation was found between the electrochem. characteristics of Faradiser M (chemical MnO_2) and the sp. **surface area** and **pore** volume of the material, for cathodes in Li batteries with nonaq. electrolytes. The increase in **pore size** and uniform morphol. of the MnO_2 lead to enhanced active material utilization in electrode processes and enhanced cathode capacity.
IT **Pore**
(**size** of, of chemical manganese dioxide, cathode capacity in relation to)
IT Cathodes
(battery, manganese dioxide for, electrochem. properties of chemical, **pore size** and **surface area** effect on, for lithium battery, Faradiser M)
IT 1313-13-9, Manganese dioxide (MnO_2), properties
RL: PRP (Properties)
(electrochem. properties of chemical, **pore size** and **surface area** effect on, for lithium battery cathodes, Faradiser M)

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